
From: Frey, Jesse
Sent: Friday, January 21, 2011 6:03 PM
To: stuart.yamada@doh.hawaii.gov; mlanuevo@honolulu.gov
Cc: Whelan, Joseph; Lottig, Justin
Subject: Updates from Waste Management

Stuart and Manny,

Please see the attached documents per your request. The documents include an update on stormwater contingencies, a record of our pumping logs while we were pumping impounded water from the E6 area into the stormwater system, a summary of beach cleanup activity and findings, and a summary of the stormwater analytical results from the 1/13 sampling event. Please distribute as necessary.

Jesse Frey

Engineer

Waste Management of Hawaii

92-460 Farrington Hwy.

Kapolei, HI 96707

Ph: 808-250-0574

Fax: 808-668-1366

<<wgsi sw update and contingency plan.pdf>> <<wgsi pumping logs.pdf>> <<Beach Cleanup Summary.pdf>>
<<Summary Table stormwater_1_14_2011.pdf>>

Waste Management recycles enough paper every year to save 41 million trees. Please recycle any printed emails.

Waimanalo Gulch Sanitary Landfill
Stormwater Management Update and Contingency Plan
1/21/2011

Following the recent major storm events, Waste Management of Hawaii (WMH) has assessed and evaluated its stormwater control systems for effectiveness. Below is an update on ongoing measures being taken to prevent future damage to the site.

- 1) Ensure that we are able to control the stormwater with the 36" temporary under-drain system that originates from the upcanyon **construction area**. Note that the Western Drainage Bypass Channel is designed to control the stormwater from the upcanyon watershed area, while the 36" temporary under-drain system was design to control stormwater in the expansion construction area during construction.
 - The effectiveness of 36" inlet structure for the upcanyon temporary drainage system has been restored and improved. The area immediately surrounding the inlet structure has been re-graded and armored with large boulders to prevent high sediment loading from clogging the inlet. A diversion berm immediately downstream of this diversion structure has been reinforced and re-built to further direct any stormwater into the inlet structure.
 - The area surrounding the future Cell E-8 is being excavated down to the relative elevation of the 36" inlet structure. This effort will help to create stormwater retention, dissipate stormwater velocities, and drop out sediment as it moves from the upper reaches of the construction area towards the 36" inlet structure. This effort has been ongoing since 1/18 and will be complete by 1/31.
- 2) Establish a functioning Western Drainage System.
 - In order to establish a functioning Western Drainage System, a functioning upcanyon diversion structure must be in place to divert the upcanyon watershed stormwater into the box culvert and fiberglass piping system. Additionally, the box culvert invert that originates at the diversion structure must be connected to the 78" fiberglass piping located on the upper bench above Cell E-6. WMH's contractor continues to work double shifts on these two fronts. A functioning Western Drainage System will be in place within 2 weeks, barring any additional large rainfall events that would prevent this work from being safely completed. Note that concrete work on this Western Drainage System will be on going after this 2 week period.
- 3) Temporary containment berm directly south of Cell E6
 - This berm was constructed by WMH's contractor during the 1/13 storm to contain large stormwater flows originating from upcanyon and prevent a catastrophic discharge to the area surrounding Kahe Power Plant. This berm was able to safely contain a storm with a return interval of more than 100 years. This berm will remain in place until Phase 3 of the West Berm is constructed. Phase 3 of the West Berm will consist of approximately 100,000 cy of compacted rockfill overlying this area and the E6 sump area where stormwater is currently impounded. Construction of Phase 3 of the West Berm will thus prevent any future ponding of water in this area, as its top deck will reside at an elevation of 450' msl. The current waste elevation in Cell E-6 is approximately 425' msl.

4) Remove the impounded stormwater from Cell E6

- Since pumping the impounded stormwater into the 72" fiberglass piping manhole adjacent to Cell E6 ceased on 1/16, WMH and the City and County of Honolulu (CCH) have been pumping the water out for disposal at various waste water treatment plants (wwtps) across the island. This has been a 24-hour operation since 1/16. Since 1/16, approximately 1 million gallons has been disposed at the wwtps. At this time, it is estimated that an additional 1 million gallons must be removed in order to gain access to the E6 sump riser pipe network which is located in the relative center of the impounded water. By current estimates, this will take an additional 6-7 days. This sump riser piping is still underwater as of 1/21. Once the sealed flange plates at the top of the riser network are visible, there will still be a considerable amount of impounded water surrounding the sump riser pipes. WMH and its construction contractor will need to create access to these riser pipes by constructing a fill 'bridge' out to them using rock and soil. Once we have access, we will re-establish the E6 sump pumping system that was in place and functioning prior to the large storm events. Once this system is re-established, it will run 24 hours per day until the liquid levels are drawn down to pre-storm levels, and ultimately until we are below our compliance elevation for the sump.

5) Restore the efficiency of the sedimentation basin

- The sedimentation basin has been inundated with sediment from 3 consecutive large rainfall events. This sediment inundation has clogged the perforations on the riser pipes and the sand filtering system on the floor of the basin, causing the water still contained in the basin to attenuate very slowly towards the outfall. This sediment needs to be removed to restore the efficiency of the sedimentation pond to levels observed prior to the 3 consecutive stormwater events.
- In order to remove the sediment, the impounded water in the pond must first be removed. While WMH was initially allowed to remove the water from the pond and apply it to the upper slopes of the landfill after conversations with EPA and HDOH officials on 1/16 and 1/17, subsequent conversations with HDOH have indicated otherwise. Restoring the efficiency of the sedimentation basin is contingent upon HDOH allowing WMH to remove the water from the pond and apply it to other areas of the landfill primarily for dust control and irrigation purposes. The other option to remove this impounded water would be to pump out the water and haul it to a wwtp for disposal. However, this would be a very time consuming and costly option.



GOODFELLOW BROS., INC. — GENERAL CONTRACTOR —

ABC-7046

Friday 1-14-11 = 2.283 Mgal
Sat 1-15-11 = 1.8000 Mgal
Sun 1-16-11 = N/A
4.083 Mgal

6705 Waimanalo Gulch Landfill

PUMP LOG

Total of
13.9 Million
gallons

Enclosed 8" Pump

1026

Pumping commenced into HOBAS manhole on 1/13 at 7:00 pm
Pumping ceased on 1/16 at 10:00 am

B" Enclosed
8" Pump

6705 Waimānalo Gulch Landfill - PUMP LOG

Friday

PUMP NO:

1026

DATE:

~~1-14-11~~ 1-14-11

1-14-11

Time
9:00

Time
1:00

1

2

1

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1	7:00pm	5:00am	1500	20' 17	-20	4050	70	
2	5:00am	9:30am	1500	20' 25	-20	4050	70	
3	9:30am	3:30pm	Reset	Pumps	NO	PUMPING		
4	3:30pm	5:00pm	1675	25	-20	50	70'	
5	7:00pm	8:00pm	1750	10'	-8	40'	70'	
6	10:00	11:15	1750	10'	-8	40'	70'	
7	UNABLE TO RESET			TO REACH WATER				
8								
9	HRS	TDH	RPM	GPM	Gal			
10	10 hrs	41	1560	2050	1,230,000			
11	4.5 hrs	49	1560	1750	472,500			
12	1.5	49	1675	2400	216,000			
13	1	32	1750	2700	162,000			
14	1.25	32	1750	2700	202,500			
15					2,283,000			
16								
17								

WMH 000592

6705 Waimanalo Gulch Landfill - PUMP LOG

Sat

PUMP NO: _____

DATE: _____

1-15-11

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1								
2	11:00am	11:00pm	1700	15	10 + 5	40	80' 10"	
3		11:00pm	LOST	PRIME	SUCKING	AIR	DID NOT	RESET
4								
5	Pump used as Standby remaining idle							
6								
7	HRS	TDH	RPM	GPM	GAL			
8	12 hrs	48'	1700	2500	1,800,000			
9								
10								
11								
12								
13								
14								
15								
16								
17								

Time



GOODFELLOW BROS., INC. — GENERAL CONTRACTOR —

ABC-7046

Fri 1-14-11 = 1.425 mgal

6705 Waimanalo Gulch Landfill

PUMP LOG

8" Trailer Open (Not enclosed)

1062

8" Trailer
open

6705 Waimanalo Gulch Landfill - PUMP LOG

Friday

PUMP NO: 1062

DATE: 1-14-11

Time
and

Time

1
2
3

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1	12:00am	5:00am	1700	2025	-20	4050'	70'	
2	5:00am	9:30am	1700	2025	-20	4050'	70'	
3	9:30am	3:30pm	Reset Pumps	No Pumping				
4	2:20pm			25	-20	50'	70'	
5		5	COULD NOT SET PUMP DID NOT PUMP					
6								
7	HRS	TDH	RPM	GPM	Gal			
1	5hrs	49	1700	2500	750,000			
2	4.5	49	1700	2500	675,000			
3					1,425,000			
11								
12								
13								
14								
15								
16								
17								

8th Trailer
open

6705 Waimanalo Gulch Landfill - PUMP LOG

Saturday

PUMP NO: 1062

DATE: 1-15-10

Time

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1	?							
2	DID NOT PUMP AT ALL 5pm TO 500 AM							
3								
4	10:30pm	5:00pm						
5	10:00am	13:00pm	1200	30	15	60	10	
6								
7	Pump used As Standby remaining time							
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								



GOODFELLOW BROS., INC. — GENERAL CONTRACTOR —

ABC-7046

Fri - 1-14-11 = 2.044 Mgal
Sat - 1-15-11 = 4.833 Mgal
Sun - 1-16-11 = 1.500 Mgal
8.377 Mgal
6705 Waimanalo Gulch Landfill

PUMP LOG

12" Skid Mounted
Pump

||||

12" Skid Mounted

6705 Waimanalo Gulch Landfill - PUMP LOG

Friday

PUMP NO: 1111

DATE: 1-14-11

Working
Time

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1	9:30am	3:15 pm	Arrive @ jobsite + Set up.					
2	3:15 pm	3:30 pm	2200	10	-5	50'	40'	
3	3:30 pm	8:00 pm	2000	16	-5	50	40'	
4	10:00 pm	12:00am	2000	20	-5	70'	40'	
5								
6		TDH	Equivalent RPM	GPM	GAL			
1	5.5 hrs	35%						
2	.25 hrs	35%	1100	5300	79,500			
3	4.5 hrs	35%	1050	5100	1,377,000			
4	2 hrs	42%	1050	4900	588,000			
11					2,044,500			
12								
13								
14								
15								
16								
17								

12" skid mounted

6705 Waimanalo Gulch Landfill - PUMP LOG

Sat

PUMP NO:

1111

DATE:

1-15-11Reset
Add
1 gudo

Time

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1	12:00am	2:30pm						
2	12:00am	9:00am	2000	20	-5	70	40	
3	11:00am	2:30pm	2000	25	-5	80	40	
4	4:00pm	5:00pm	2000	35	5	130	80	
5	Pump was running when I started at 5pm it ran all night							
6	At 2000 RPM							
7	500pm	12:00am	2000	35	5	130	80	
8		TDH	Equip RPM	GPM	GAL			
2	9 hrs	42'	1050	4900	2,646,000			
3	3.5 hrs	49'	1050	4700	987,000			
4	1 hr	77'	1050	2500	150,000			
7	7 hr	77'	1050	2500	1,050,000			
13					4,833,000	Total		
14								
15								
16								
17								

WMH 000599

6705 Waimanalo Gulch Landfill - PUMP LOG

PUMP NO:

1111

DATE:

Sun 1-16-11

	Start	Stop	RPM	Suction Head	Discharge Head	Suction Length	Discharge Length	Efficiency
1								
2	12:00am	10:00am	2000	35	5	130	80	
3								
4		TDH	RPM	GPM				
5	10 hrs	77'	1030	2500	1,500,000			
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

WGSL Storm Cleanup

Date	Location	debris/typical ocean trash (No. of 40 gallon bags)	medical waste
14-Jan	WGSL Storm Drain Outlet	20	1 gallon bucket full
15-Jan	WGSL Storm Drain Outlet	10	2 syringes, 1 vial
16-Jan	White Plains Beach	5	1 syringe
16-Jan	WGSL Storm Drain Outlet	0	1 syringe
17-Jan	White Plains Beach	2	2 syringes, 1 vial
17-Jan	White Plains Beach/Nimitz Beach	1	2 syringes
18-Jan	Pokai Bay	0	0
18-Jan	White Plains Beach/Nimitz Beach	4	0
18-Jan	White Plains Beach/Nimitz Beach	10	2 syringes
19-Jan	White Plains Beach/Nimitz Beach	0	1 syringe
19-Jan	Pokai Bay	0	0
19-Jan	Kahe Beach/Tracks/WGSL Discharge/HECO Discharge	0	1 syringe, 1 vial
20-Jan	Kahe Beach/Tracks/WGSL Discharge/HECO Discharge	0	0
20-Jan	Ko'Oolina (Paradise Cove)	0	1 syringe
20-Jan	White Plains Beach/Nimitz Beach	0	0
21-Jan	White Plains Beach/Nimitz Beach	0	0
21-Jan	Kahe Beach/Tracks/WGSL Discharge/HECO Discharge	0	0

Waimanalo Gulch Sanitary Landfill Storm water Monitoring
Five Monitoring Stations, 13 January 2011 Discharge Event
Laboratory Final Data Summary Table - FOR INTERNAL USE ONLY

Method	Analyte	Unit	Screening Criteria	Benchmark Level	UPCANYON	CULVERT	OCEAN OUTLET	OCEAN EAST	OCEAN WEST
1664A	HEM (Oil and Grease)	mg/L	15	15	3.7 J	5.1	4.5 J	4 J	3.5 J
40CFR136A 625	Alpha-Terpineol	mg/L	0.016	NA	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	Benzoic acid	mg/L	0.071	NA	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	p-Cresol	mg/L	0.014	NA	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	Pentachlorophenol	mg/L	0.02	NA	< 0.019 *	< 0.021 *	< 0.023 *	< 0.021 *	< 0.02 *
	Phenol	mg/L	0.015	1.0	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
EPA 200.7 Rev 4.4	Arsenic	mg/L	0.36	0.16854	< 0.015	< 0.015	< 0.015	< 0.015	0.0044 J
	Cadmium	mg/L	0.003	0.0159	< 0.00045 *	< 0.00045 *	< 0.00045 *	< 0.00045 *	< 0.00045 *
	Calcium	mg/L	NA	NA	11	24	190	370	370
	Iron	mg/L	1.0	1.0	41	8.6	14	20	18
	Lead	mg/L	0.029	0.0816	< 0.009	0.0034 J	0.0061 J	0.0057 J	0.0058 J
	Magnesium	mg/L	NA	0.0636	11	13	510	1,100	1,100
	Potassium	mg/L	NA	NA	6.1	7	200	480	470
	Selenium	mg/L	0.02	0.2385	< 0.015	0.0078 J	< 0.015	< 0.015	0.0064 J
	Silver	mg/L	0.001	0.0318	< 0.00093 *	< 0.00093 *	< 0.00093 *	< 0.00093 *	< 0.00093 *
	Sodium	mg/L	NA	NA	51 B	73 B	5,000 B	11,000 B	10,000 B
	Zinc	mg/L	0.022	0.117	0.058	0.017 J	0.037	0.049	0.047
EPA 245.1	Mercury	mg/L	0.0024	0.0024	< 0.0002	< 0.0002	< 0.0002	0.000033 J	< 0.0002
EPA 7196	Hexavalent Chromium	µg/L	16	NA	< 10	< 10	< 10	< 10	< 10
EPA 365.1	Phosphorus, Total	mg/L	NA	2.0	0.58 B	0.38 B	0.33 B	0.34 B	0.22 B
MCAWW 350.1	Ammonia	mg/L	4.9	19	0.17	0.11	0.055 J	0.074 J	0.053 J
MCAWW 353.2	Nitrate-Nitrite as Nitrogen	mg/L	NA	0.68	3.2	2.9	1.9	0.17	0.13
EPA Total Nitrogen	Nitrogen, Total	mg/L	NA	NA	4.1	4.8	2.8	0.41	0.77
EPA 405.1	BOD (5-Day)	mg/L	NA	30	< 2	8.91	3.48	< 2	< 2
MCAWW 410.4	Chemical Oxygen Demand	mg/L	NA	120	29	45	160	410	450
SM 2540D	Total Suspended Solids	mg/L	100	100	190	57	320	340	320
MCAWW 300.0A	Bromide	mg/L	NA	NA	0.16 J	0.73	32	67	67
	Chloride	mg/L	NA	860	61	95	9,600	19,000	19,000
	Sulfate	mg/L	NA	NA	27 B	45 B	1,300 B	2,800 B	2,700 B
SM 2320B	Bicarbonate Alkalinity	mg/L	NA	NA	31	77	110	120	120
	Carbonate Alkalinity	mg/L	NA	NA	< 5	< 5	< 5	< 5	< 5
	Total Alkalinity	mg/L	NA	NA	31	77	110	120	120
Bac-T	Total Coliform	MPN/100 mL			500	> 1,600	> 1,600	> 1,600	170
	E. coli	MPN/100 mL			74	< 2.0	3.6	3.6	< 2.0
Field Method	pH	SU	5.5-8.0	6.0-9.0	8.46	8.14	8.13	8.06	7.92

Note:

Bold	exceed screening criteria
<	not detected above the reporting limits
>	greater than
*	not detected above the method detection limits
µg/L	micrograms per liter
mg/L	milligrams per liter
B	compound was found in the blanks (0.221 J mg/L for Sodium, 0.0115 J mg/L for Total Phosphorus; and 0.245 J mg/L for Sulfate)
BOD	biochemical oxygen demand
HEM	n-hexane extractable material
NA	no limitation at this time
J	estimated result is less than the reporting limit but greater than or equal to the method detection limit
SU	standard unit